

*R12/17HK -
L120/11HK*

en

Assembly and Operating Instructions Tubular Drives With Hand Crank

Important information for:

- *Fitters*
- *Electricians*
- *Users*

Please forward accordingly!

These instructions must be kept for future reference.



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Assembly and Operating Instructions

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Introduction

The R12/17HK to L120/11HK Tubular Drives with Hand Crank are high-quality products with a broad range of features:

- **Suitable for roller shutters**
- **Suitable for awnings and conservatory sunshades**
- **Suitable for door applications**
- **Easy limit switch setting at the drive**
- **Compatible with all Becker control systems for roller shutter and sun protection applications**

Please adhere to these Operating Instructions when installing and setting up the system.

Warranty

Structural modifications and incorrect installation which are not in accordance with these and our other instructions can result in serious injuries, e.g. crushing of limbs. Therefore, structural modifications should only be carried out with our prior approval and in accordance with our instructions, particularly the information contained in these Assembly and Operating Instructions. Any further processing of the products which does not comply with their intended use is not permitted.

The end product manufacturer and fitter have to ensure that all the current statutory, official regulations and, in particular, EMC regulations are adhered to during utilisation of our products, especially with regard to end product assembly, installation and customer advice.

Safety Information

The following safety instructions and warnings are intended to avert hazards and to prevent damage to property and personal injuries. **Please retain for future reference.**



Caution

Denotes a potentially hazardous situation. If this is not avoided, injuries may result.



Attention

Denotes a potentially hazardous situation. If this is not avoided, the product or something in its vicinity may be damaged.



Note

Denotes user tips and other useful information.



Important safety instructions for the user

Caution! Failure to observe these instructions can lead to serious injuries.

- All operational work including maintenance and cleaning, on electrical installations as well as other parts of the construction must always be performed by authorised specialists, especially by qualified electricians.
- Do not allow children to play with control units.
- Systems have to be regularly checked by authorised specialists for wear and damages.
- Always put damaged systems out of operation immediately until they are repaired by an authorised specialist.
- Do not operate equipment if people or objects are within the danger zone.
- Observe the danger zone of the equipment during operation.
- Bring the equipment to a stop and disconnect the mains power supply when maintenance and cleaning jobs are performed either on the system itself or in the immediate vicinity of it.
- Ensure that there is an adequate distance (at least 40 cm) between moving parts and adjacent objects.
- Crushing and shearing points must be avoided or protected.



Assembly and Operating Instructions



Important safety instructions for the installation and commissioning

Caution! Failure to observe these instructions can lead to serious injuries.

- Please comply with the safety instructions EN 60335-2-97. Please note that these safety instructions cannot be assumed as being complete, since this standard does not consider all the possible causes of risk. For example, the construction of the operated product, the effectiveness of the drive in the location of installation or the mounting of the final product in the end user's place of usage cannot be taken into consideration by the drive manufacturer.

If any questions or concerns regarding the safety instructions contained in the standard arise, please contact the manufacturer of the respective part or end product.

- All operational work, including maintenance and cleaning, on electrical installations as well as other system parts must always be performed by authorised specialists, especially qualified electricians.
- During operation of electrical or electronic equipment and units, certain components are subject to a hazardous electrical voltage. Physical injuries or damage to property can result in the event of unqualified interventions or failure to comply with the warning notices.
- All applicable standards and regulations for the electrical installation must be complied with.
- Only use spare parts, tools and additional equipment which have been approved by the drive manufacturer.
- Unapproved third party products or modifications to the system and its accessories represent a risk to your safety and the safety of others. This means that the utilisation of unapproved third party products, or modifications which have not been agreed with or approved by us are prohibited. We shall not accept liability for damages arising from such actions.
- Before installation, shut down all lines and control devices that are not essential for operation.
- Position control devices within sight of the driven product at a height of over 1.5 m.
- Stationary mounted control units have to be fixed in sight.
- Ensure that there is an adequate distance (at least 40 cm) between moving parts and adjacent objects.
- Nominal torque and duty cycle must be suitable for the requirements of the driven product.
- Technical data - nominal torque and service life are located on the type plate of the tubular drive.
- Moveable parts of the drive have to be mounted at a height of more than 2,5 m above ground or on a different level, which allows access to the drive.
- Crushing or shearing points must be avoided or protected.
- Observe safety distances in accordance with DIN EN 294.
- When installing the drive, an all-pole separation capability from the mains with at least 3 mm contact opening width per pole must be provided (EN 60335).
- If the mains connection cable is damaged, it may only be replaced by the manufacturer.
- Drives with a H05VV-F connection cable are only to be used inside the building.
- For door applications please especially adhere to EN 12453.
- Drives from Becker Antriebe are to be mounted and operated solely with mechanical accessory components shown in the current Becker product catalogue.

Intended Use

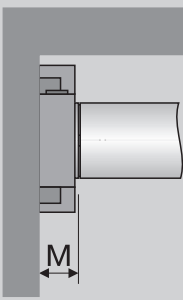
R12/17HK to L120/11HK tubular drives are intended exclusively for the operation of roller shutters, roll-up doors and awnings. Any other use or a use going beyond this is considered as improper.

The hand crank is **only** designed for convenient manual operation in the event of a **power failure**. Continuous operation and the attaching of tools (e.g. a power drill to drive the crank) is prohibited because after a while this causes malfunction of the crank, and the failure of the tubular drive.

Other applications, utilisation and modifications are not permitted in order to protect the safety of the users and others, since these actions can impair the system's safety, resulting in personal injuries and property damage. Becker-Antriebe shall not accept liability for damages arising from such actions. Always observe the information in these instructions when operating or repairing the system. Becker-Antriebe shall not accept liability for damages resulting from incorrect usage.

Mounting and Start Up

1

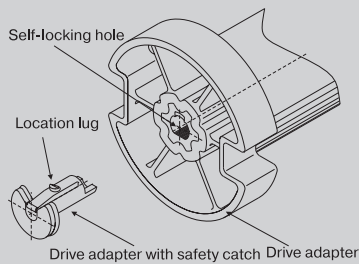


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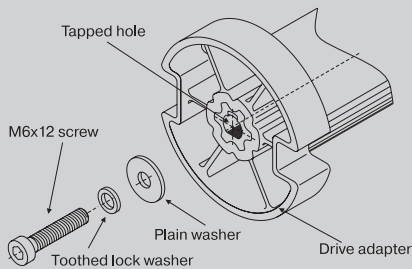


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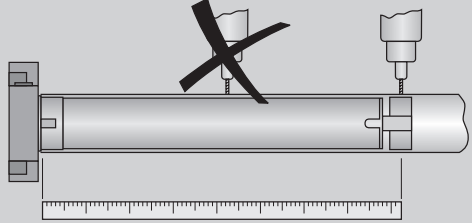
R12/17HK to R25/17HK



R30/17HK to L120/11HK



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Attention

Drives from Becker Antriebe are to be mounted and operated solely with mechanical accessory components shown in the current Becker product catalogue.

The installer must ensure that the masonry and roller shutter box are adequately stable to accommodate and sustain the torque of the drive and total weight of the shutter curtain.



Caution

Electrical connections should only be performed by a qualified electrician. Disconnect the mains supply before installation. Please give the attached information on electrical connections to the responsible electrician.

1. Determine the lateral space requirement (M) of the head piece, the limit switch collar and the motor bracket, in order to calculate the required length of the barrel. The clear dimension of the roller shutter casing (X) minus the total length from the wall bracket, head piece (M) and limit switch collar (G) gives the length (L) of the barrel:

$$L = X - (G + M)$$

Measure the distance from the wall bracket and the connecting head itself, as these may vary depending on the combination of drive and bracket.

2. Fix the wall bracket and limit switch collar.



Attention

Wall mounting brackets or other securing elements must be positioned as to avoid tension when adjoining the HK attachment.

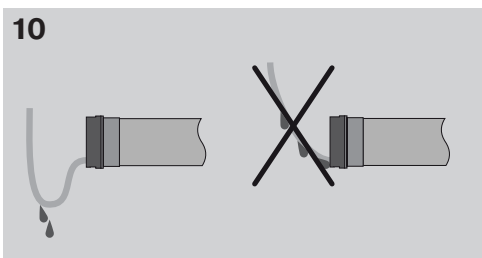
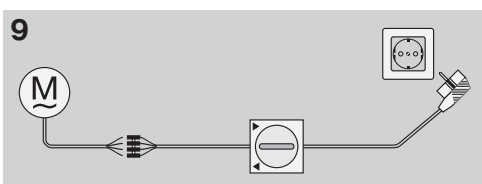
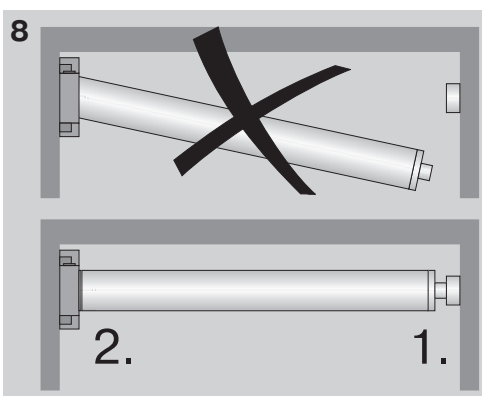
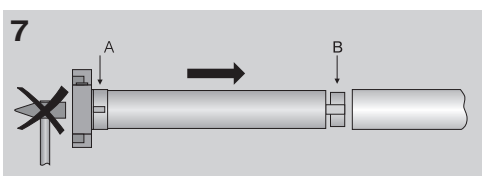
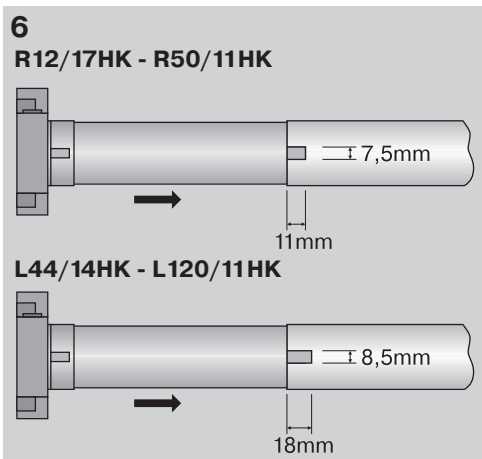
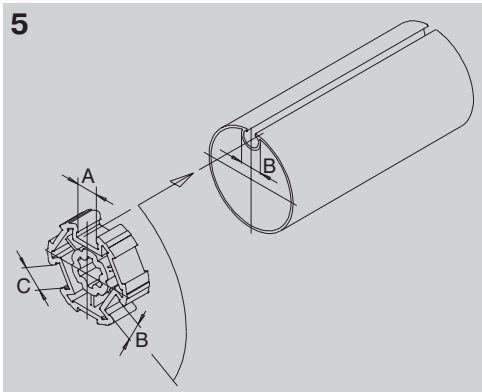
Please observe the following points when installing the drive:

- **Installation of drive adaptor with drive adaptor safety catch on drives R12/17HK to R25/17HK:**
 The feed direction of the drive adaptor safety catch is preset by its shape. When inserting the drive adaptor safety catch, make sure that the locking lug engages. You can tell by an audible click. Check that the catch is securely located by pulling on the drive adaptor (Fig. 3).
- **Installation of drive adaptor with screw connection on drives R30/17HK to L120/11HK:**
 In this case an M6x12 screw is used for fastening. This is secured with an M6 plain washer and an appropriate toothed washer (Fig. 3).

3. Before fitting in the barrel, take the measurement from barrel end to the centre of the drive adapter and mark on the barrel (Fig. 4).



Assembly and Operating Instructions



On shaped section barrels:

Tolerances in the slot widths in different barrels can, with some drive adaptors, be equalised by turning the drive adaptor into an-other slot recess. These slot recesses have different dimensions and enable you to accurately fit the drive (Fig. 5).

On round barrels:

First notch the tube on the motor side, so that the key of the limit collar can also be pushed into the barrel. There must not be any play between the limit collar key and the barrel (Fig. 6).

- Mount the drive with the appropriate limit ring adaptor (A) and drive adaptor (B). Insert the drive with the pre-mounted adaptors into the barrel so that it locks positively. Make sure that the adaptors are securely located in the barrel (Fig. 7).

Connect the driver of the tubular drive to the roller tube properly, as follows:

Size of drive [mm]	Roller shutter tubes-Ø [mm]	Torque max. [Nm]	Fastening screws for drivers (4 x)
Ø 45	60 - 70 mm plastic or diecast drive adapter	50	flat-headed sheet-metal screw ST 6.3 x 10 DIN 7982
Ø 58	63 - 120 mm diecast drive adapter	120	flat-headed sheet-metal screw ST 9.5 x 10 DIN 7982
Ø 58	85 - 133 mm aluminium drive adapter	120	flat-headed screws M8 x 16 DIN 7991



Attention

When drilling the barrel, never drill in the area of the tubular drive! The drive must not be struck or allowed to fall when being inserted into the barrel! (Fig. 4 and 7)

The drive manufacturer also recommends screwing the thrust bearing to the roller tube.

- Fit the assembled unit, comprising the barrel, tubular drive and barrel adapter, into the roller shutter box Fig. 8).
 - First place the barrel in the counter bearing of the application (1.).
 - Afterwards, connect the HK housing with no less than 2 each M6 type screws in the securing element., i.e. wall mounting bracket (2.).
 - Secure/affix the counter bearing.
- Secure the drive according to the type of wall bracket fastening, with a split-pin or spring connector. Commissioning can take place with the Becker installation assembly set (art. no. 4901 002 158 0) or the operating element provided.



Attention

The installation assembly set is not suitable for continuous operation, but is only provided for commissioning!

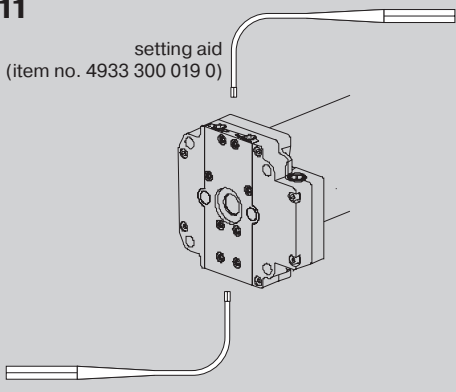
- Connect the wires of the tubular drive to those of the same colour in the installation assembly set or operating element, and switch the power supply on (Fig. 9). Check the running direction. Should the running direction not correspond with the operating element i.e. the arrows on the switch, please swap the black and brown connecting wire round.

Cabling (Abb. 8)

Setting the End Limits

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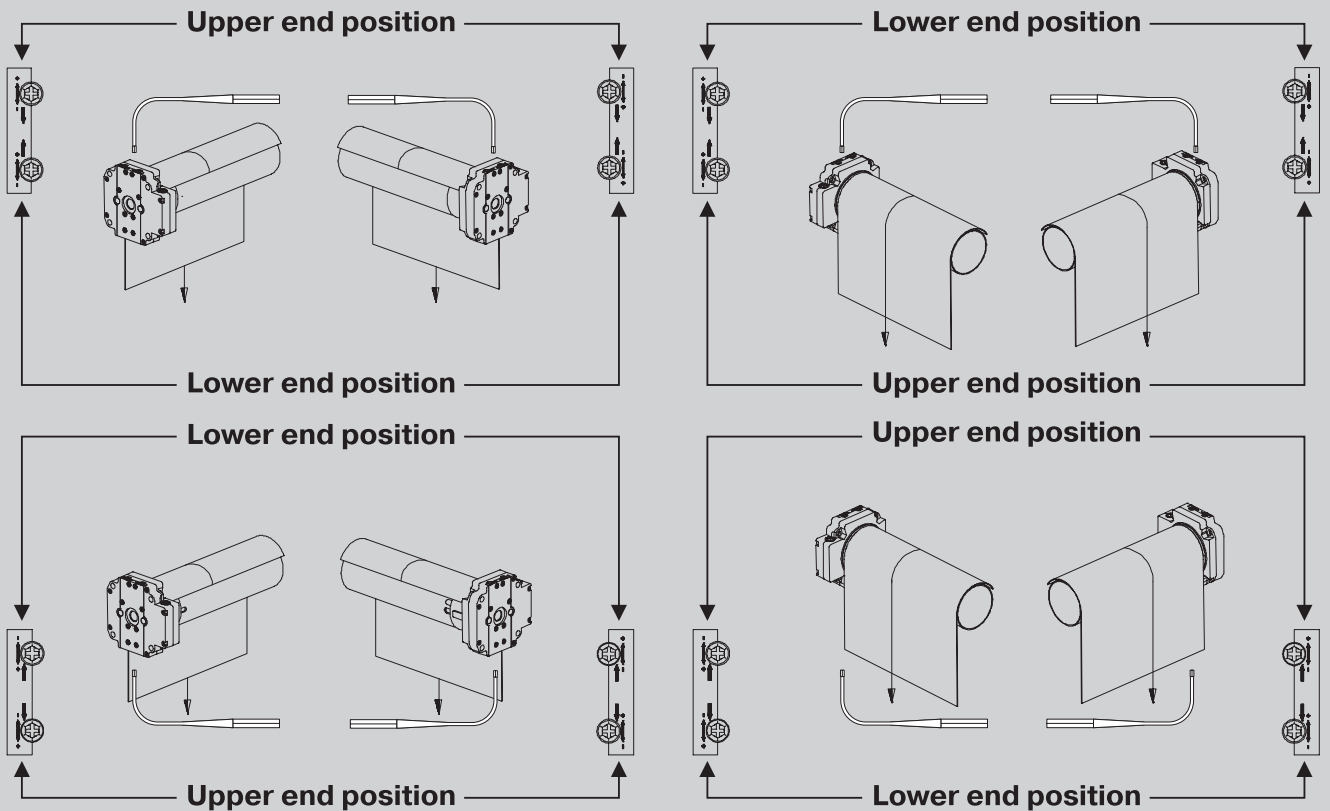
setting aid
(item no. 4933 300 019 0)



Setting tool

Use the setting tool to set the final positions (fig. 11).

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Setting the lower end position

1. Before the shutter curtain is joined to the barrel, press the DOWN switch to move the drive downwards until it shuts off automatically.
2. Adjust the lower end position (Fig. 12) to position the barrel such that the shutter curtain can be easily secured to the barrel.

Setting the upper end position

Press the UP switch. The drive will retract the shutter. To increase or reduce shutter travel, adjust the corresponding setting screw.



Note for roller shutter applications

Do not install any mechanical stoppers to consider possible changes in length of the roller curtain. The individual slats should be secured to prevent lateral shifting.

Ensure that the shutter runs smoothly and unhindered in both directions (UP and DOWN). This applies to both initial and subsequent operation.



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Function check

As a final function check, let the shutter run in both directions to the end position.

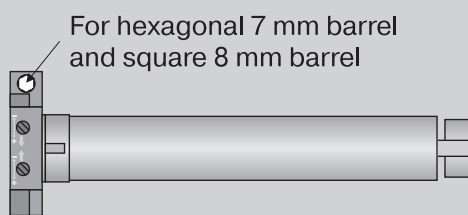


Attention

Becker tubular drives are designed for short-time operation at a rated load (S2/KB 4 min. or 8 min.). If operation at a rated load is exceeded, there is a risk of thermal overload.

Using the Hand Crank

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Note

For trouble-free installation, Becker-Antriebe GmbH recommends the use of inspected Becker mechanical and electronic accessories that are designed for these drives.

The hand crank is solely designed for use when there has been a power failure. Make sure you do not wind further than the end limits.

Hand crank for closed design

The closed-design hand crank can be used on roller shutters and roll-up doors, with or without starting system. The square rod is attached to the shutter box. Care should be taken to ensure that the rod is fitted parallel to the guide in the crank housing.

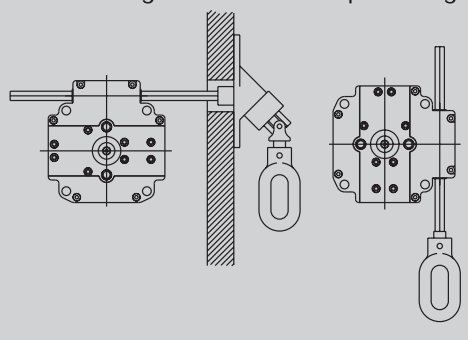
Hand crank for open design

This hand crank can be used on awnings, roller shutters and roll-up doors without a starting system. Push the square rod into the guide in the crank housing and secure axially with a washer or two setting screws.

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Closed design

Open design



Information for the Electrician

Becker tubular drives with mechanical limit switching must not be connected in parallel. For simultaneous control of several drives use appropriate Becker controls.

To control the up and down direction, use external conductor L1.

Other devices or consumption units (lamps, relays, etc.) must not be connected directly to the drive connection cables. For this purpose, the drives and additional units must be decoupled by relay controls. When installing the drive, an all-pole separation capability from the mains with at least 3mm contact opening width per pole must be provided (EN 60335).



Attention!

Only use mechanically or electrically locked switching elements with a marked zero position! Protect the electrical connections against dampness.

Becker tubular drives are CE certified. These drives comply with the valid EU guidelines and meet EMC regulations.

If the drive is operated with units containing sources of interference, the electrician must ensure suitable interference suppression for the relevant devices.

Disposal

This product consists of various materials which must be disposed of correctly. Please find out more about relevant national legislations governing the recycling and disposal systems for this product.
The packaging material must be disposed of correctly.

Declaration of Conformity

Becker tubular drives display the CE mark. These drives comply with valid EU directives and meet EMC requirements. The complete Declaration of Conformity can be requested from the manufacturer.



Technical Data

Type	R12/17HK	R15/17HK	R20/17HK	R25/17HK	R30/17HK	R40/17HK	R50/11HK
Nominal torque (Nm)	12	15	20	25	30	40	50
Output speed (min ⁻¹)	17	17	17	17	17	17	11
Limit switch range	38 revolutions						
Mains voltage	230 V AC / 50 Hz						
Power consumption (W)	110	140	160	175	205	260	240
Nominal current consumption (A)	0.50	0.65	0.75	0.80	0.90	1.15	1.10
Operating mode	S2 4 min.						
Protection class	IP 44						
Min. tube diameter (mm)	47	47	47	47	47	47	47

Type	L44/14HK	L50/17HK	L60/11HK	L70/17HK	L80/11HK	L120/11HK	
Nominal torque (Nm)	44	50	60	70	80	120	
Output speed (min ⁻¹)	14	17	11	17	11	11	
Limit switch range	38 revolutions						
Mains voltage	230 V AC / 50 Hz						
Power consumption (W)	250	315	265	430	310	435	
Nominal current consumption (A)	1.20	1.40	1.20	1.90	1.40	1.90	
Operating mode	S2 4 min.						
Protection class	IP 44						
Min. tube diameter (mm)	60	60	60	60	60	60	

What should you do, if...?

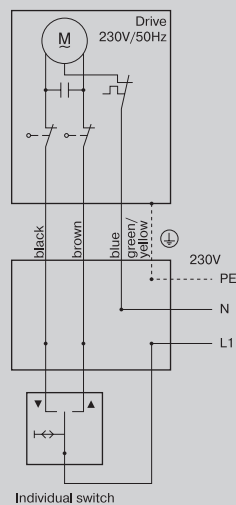
Fault	Cause	Solution
The roller shutter rolls up uneven or will not raise	1. One or more curtain connecting parts have been torn off 2. Shutter slat is torn off.	Repair application; readjust end limits
Tubular drive stops arbitrarily, impossible for it to move further in the same direction	Roller shutter curtain keeps jamming, exceptional guide friction	Repair application
Tubular drive does not run in the direction required	Electrical connection faulty	Check the electrical connection



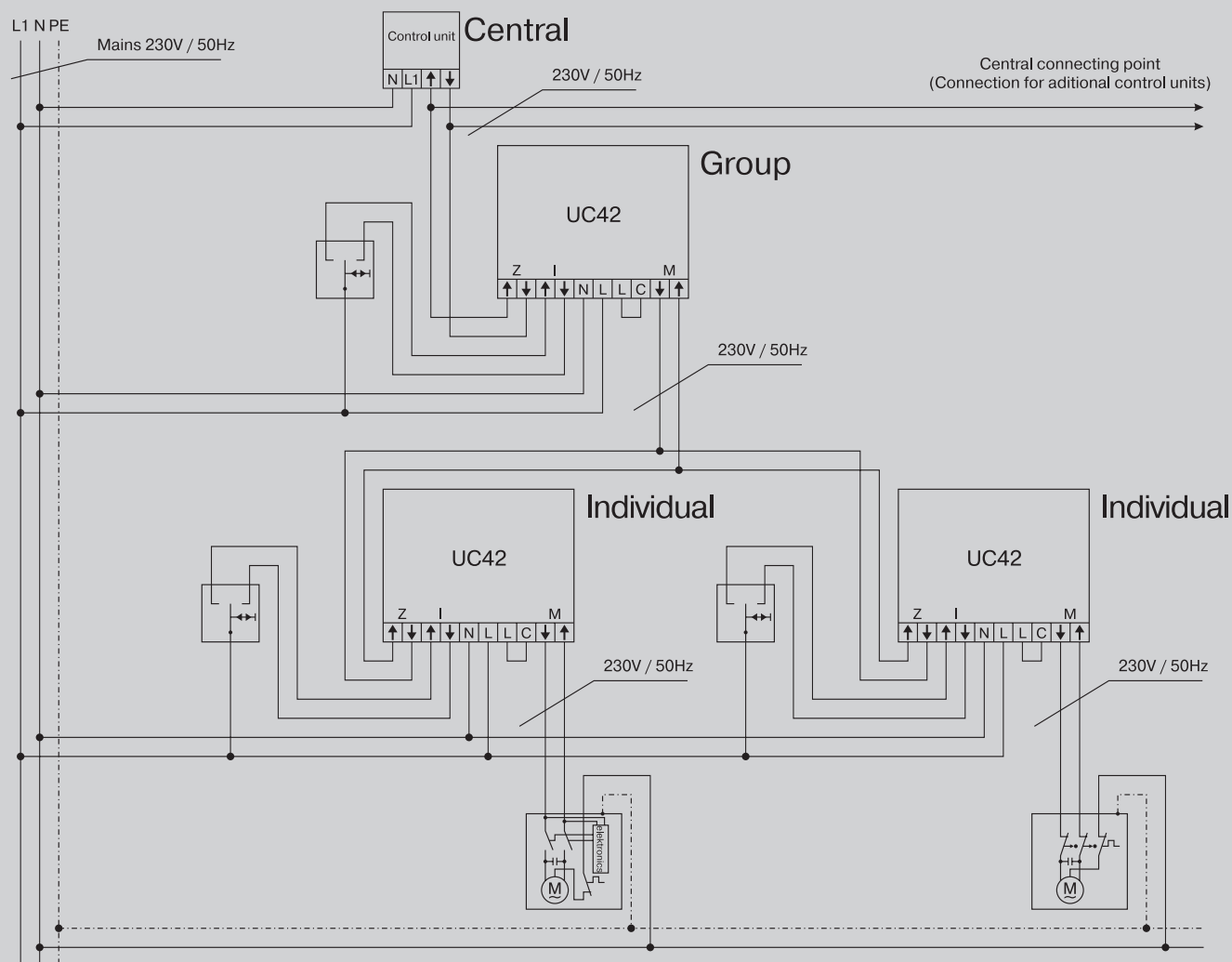
Assembly and Operating Instructions

Wiring Diagrams

Operation with individual switch



Central, group and individual control using Centronic UnitControl UC42





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2010 300 231 0b 12/08



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